RAILROAD AVENUE BRIDGE
(Church Street Bridge)
Spanning Mispillion River on Church Street
Milford
Sussex County
Delaware

HAER No. DE-36

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Northeast Region
U.S. Custom House
200 Chestnut Street
Philadelphia, PA 19106

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HISTORIC AMERICAN ENGINEERING RECORD

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(Church Street Bridge) HAER No. DE-36

Location: Spanning Mispillion River on Church Street in the City of Milford, Sussex County, Delaware

USGS Milford 7.5' Quadrangle, Universal Transverse Mercator Coordinates:
18 463600.4306690

Date of Construction: 1903 (piers only)

Engineer: William B. Carswell

Contractor: James A. Hirons

Stone Mason: Joseph Russo

Present Owner: City of Milford, Department of Public Works

Present Use: Vehicular bridge

Significance: The Railroad Avenue Bridge was designed by William B. Carswell and installed by James A. Hirons, with stonework by Joseph Russo. The bridge was listed as potentially eligible for the National Register of Historic Places when it was identified as the earliest steel girder bridge in the statewide bridge survey.

Project Information: This documentation was undertaken in May 1992 in accordance with instructions from the Delaware State Historic Preservation Office by Edward Heite for Davis, Bowen and Friedel, Inc., engineers, as a mitigative measure prior to the replacement of the bridge.

Edward F. Heite
Heite Consulting
Camden, Delaware

DESCRIPTION

Railroad Avenue Bridge spans the Mispillion River between Kent and Sussex counties, Delaware, in the city of Milford. Between stone abutments, the span is 36 feet. In midstream is a concrete support that appears to be a later addition.

The concrete roadway, 34 feet 10.5 inches wide, is supported by steel beam stringers encased in concrete, spaced 36 inches apart on centers. The deck over these beams is concrete, eight inches thick. Wooden walkway decks on both sides of the bridge are supported by steel I-beams. Other steel I-beams have been inserted transversely under the bridge at its center, probably at the time the concrete support was inserted.

Bridge abutments consist of stone masonry resting on oak pilings. The midstream concrete supporting pier also is supported by pilings. Iron handrails along both sides are supported by cast-iron posts and connected by strap-iron lattices.

HISTORICAL BACKGROUND

The first "Milford Bridge," on Walnut Street, was a drawbridge authorized under an Act of the General Assembly in 1785 to be built by Joseph Oliver. A 1791 Act provided for the bridge to be maintained by a local board of commissioners and to be supported by the two counties. The 1791 law specified that the bridge should be 35 feet wide between abutments and should have a draw span.1 Church Street, a block upstream, would eventually have a similar span. Through much of the nineteenth century, the Mispillion was bridged at Walnut Street, at Railroad Avenue (now Church Street), and at the spillway on Depot Street.

1903 was a year of great change in Milford. At the January town election, according to the local paper, "The ticket elected was for town improvements, which have been hindered for years by a lot of narrow-minded fossils."2

The new commissioners launched an ambitious program of street improvements, which included sewers, curbs, pavement, and sidewalks. Bridges, a county responsibility, were a particular problem. Milford commissioners waited on the Levy Courts (governing bodies) of Kent and Sussex counties, pleading for

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[1] J. Thomas Scharf, *History of Delaware*, p. 1194.

[2] *Milford Chronicle*, January 9, 1903.

replacement of the Walnut Street and Church Street bridges.[3] The counties appointed committees, which met at Milford on April 10 and engaged Wilmington engineer William B. Carswell to draw plans and specifications.[4]

In 1903, the span now called the Church Street Bridge was officially called the Railroad Avenue Bridge. The street was Church Street north of Front Street and was called Railroad Avenue south of Front Street. In the present century, the whole street was renamed Church Street.

By July, Carswell had designed the new bridges. A new "Buckle Plate Steel Bridge" was to be built at Walnut Street.[5] At Church Street, stone piers would be built to receive the former Walnut Street span. During construction, Milford would be left with one bridge, at the west end of town at Depot Street.

Carswell submitted duplicate plans to the two counties, and Kent County solicited bids, to be opened August 4. During the Kent County Levy Court meeting, the Clerk of the Peace was instructed to telephone Sussex, to see if Sussex County was opening bids. There being difficulty making the long-distance telephone connection, Levy Court directed the Clerk to delay the bid opening until August 11. Before the meeting adjourned, a call came from Sussex County, informing Kent that "We have not advertised for bids and do not intend to, as we see you have advertised and instructed bidders to send duplicate bids to Sussex Court, we are satisfied to leave the matter to Kent County."[6]

Accordingly, Kent County opened the bids August 11 and awarded the contract for $5,500 to James A. Hirons, a road contractor who had done considerable work in the county. After Hirons had contracted for ironwork and other materials, Sussex expressed concern about the way the bidding had been handled. Kent went ahead and built the bridge.

By September 18, timbers for the Church Street pilings had been delivered and the pile driver was expected the following

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[3] *Milford Chronicle,* September 11, 1903.

[4] Kent County Levy Court minute book 1900-1908, p. 291.

[5] Kent County Levy Court minute book 1900-1908. pp.290-293.

[6] Kent County Levy Court minute book 1900-1908. p.292.

week.[7] According to the October 2 paper, stone abutments were under construction while cofferdams were keeping the water out.[8]

Work had been expected to take a month, but it dragged on. Church Street traffic was diverted over the Depot Street bridge, which crossed the mill dam at Reis Factory. Around December 1, a steam traction engine broke through the deck on Depot Street. Commissioners from the two counties immediately agreed to replace the deck.[9] The December 11 newspaper reported that Walnut Street bridge work would be delayed to allow Christmas shopping traffic to pass over the old one.[10]

After Christmas, Railroad Avenue Bridge was completed quickly. By the middle of January, the walkway was open and the carriageway reportedly was expected to be open in a few days.[11] This is probably the time required to move the roadway from Walnut Street. The walkways, with their separate I-beam supports, were apparently installed first, to serve some purpose during the installation of the main span.

Construction then began on the new Walnut Street bridge. Certain Sussex commissioners claimed that Kent County had willfully or intentionally ignored them, but Kent County sent a delegation to make amends. After the work was finished, in the spring of 1904, the two county commissions patched their differences and paid for the bridge.[12]

At some later date, the walkways were covered with asphalt pavement and the southeast handrail post was replaced. Capstones were lost from the northwest wingwall. Along the riverside, a cement-block retaining wall was installed.

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[7] *Milford Chronicle*, September 18, 1903.

[8] *Milford Chronicle*, October 2, 1903.

[9] *Milford Chronicle*, December 4, 1903.

[10] *Milford Chronicle*, December 11, 1903.

[11] *Milford Chronicle*, January 15, 1904.

[12] Kent County Levy Court minute book 1900-1908. p. 293.

TECHNOLOGICAL BACKGROUND

The Railroad Avenue Bridge is a beam-reinforced span, also called a concrete-encased I-beam.[13] The exact date of its original fabrication is unknown, but it probably was fairly new when it was moved in 1903.

Beam reinforcement of concrete bridge slabs was a common practice during the last decade of the nineteenth century. This technique was a logical derivative of older beam-supported designs, modified by the addition of portland cement, introduced in 1871.

Engineers soon discovered that steel reinforcing rods were both cheaper and stronger than beams for reinforcing concrete spans. During the twentieth century, bar-reinforced concrete has become the dominant building material.

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[13] P. A. C. Spero and Company, *Delaware Historic Bridges Survey and Evaluation*. Delaware Department of Transportation Historic Architecture and Engineering Series No. 89.

BIBLIOGRAPHY

Kent County Levy Court minute book, 1900-1908, Delaware Archives.

Milford Chronicle. Microfilm at Delaware Archives.

Scharf, J. Thomas. *History of Delaware*. 2 volumes. Philadelphia: L. J. Richards and Company, 1888.

Spero, P. A. C., and Company. *Delaware Historic Bridges Survey and Evaluation*. Delaware Department of Transporation Histoirc Architecture and Engineering Series No. 89. Dover, 1991.

SKETCH PLAN

(Not to Scale)